

**ABSTRACT**

A coating for a silicon based material such as those used in high temperature environments.

An aspect of the invention is directed to an environmental barrier coating including a silicon bond coat, an intermediate coat, and a top coat. The intermediate coat may comprise tantalum aluminate, niobium aluminate, or a mixture of the two. The intermediate coat is resistant to solid-state subsurface reactions with the bond coat and the top coat and is substantially inert to reactions with silica at high temperatures.